REMARKS

Claims 1-4, 8-11, 18 and 20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (U.S. Patent 6,541,382) in view of Ballantine (U.S. Patent 6,417,070). This rejection is respectfully traversed for the following reasons.

Claim 1 recites, "patterning a silicon oxynitride layer having a composition $Si_XO_YN_ZH_A$" and "conditioning the patterned silicon oxynitride layer such that the silicon oxynitride layer has a composition $Si_XO_{Y+}N_ZH_{A-}$". (Emphasis added.)

In contrast, Cheng et al. teach that a "silicon oxynitride ARC 16 is ... partially oxidized to form a silicon oxide layer 70b on the ARC surface". (Emphasis added) (Cheng et al., Col. 8, lines 20-22.) That is, Cheng et al. teach that a portion of a silicon oxynitride ARC 16 is converted to silicon oxide.[1] (Cheng et al., Col. 8, lines 22-24.) The unconverted, and therefore unconditioned, portion of silicon oxynitride arc 16 remains beneath the silicon oxide layer 70b. (Cheng et al., Fig. 3A.) Cheng et al. do not teach or suggest that the composition of the silicon oxynitride ARC 16 that remains beneath the silicon oxide layer 70b is changed in any way.

Because Cheng et al. teach the formation of a silicon oxide layer 70b and an underlying unmodified silicon oxynitride arc 16, Cheng et al. fail to teach "conditioning the patterned silicon oxynitride layer such that the silicon oxynitride layer has a composition $Si_XO_{Y+}N_ZH_{A-}$" as recited by Claim 1. Ballantine et al. fail to remedy this deficiency

[1] Note that Cheng et al. teach that the silicon oxynitride ARC 16 should be converted to silicon oxide to facilitate the subsequent removal of this layer. (Cheng et al., Col. 8, lines 27-29; Col. 6, lines 1-7.)

of Cheng et al. In fact, Ballantine et al. fail to teach that a silicon oxynitride layer is even present during the described rapid thermal oxididation step.

The Examiner argues that using the rapid thermal oxidation described by Ballantine et al. in place of the rapid thermal oxidation described by Cheng et al. would remedy the deficiencies of Cheng et al. More specifically, the Examiner argues that "the RTA step of Ballantine would increase the oxygen content and decrease the hydrogen content of the oxynitride film".

However, both Cheng et al. and Ballantine et al. teach that silicon oxide layers should be formed by rapid thermal oxidation (RTO) in the presence of steam. (Cheng et al., Col. 8, lines 12-15; Ballantine et al., Col. 2, lines 44-46.) Because both Cheng et al. and Ballantine et al. teach the same method for forming silicon oxide layers, Ballantine et al. does not add anything of significance to the teachings of Cheng et al., with respect to Claim 1.

For the foregoing reasons, Claim 1 is allowable over Cheng et al. in view of Ballantine et al. Claims 2-4, 8-11, 18 and 20, which depend from Claim 1, are allowable over Cheng et al. in view of Ballantine et al. for at least the same reasons as Claim 1.

In addition, Claim 20 recites "wherein the wet clean step does not react with the conditioned silicon oxynitride layer". In accordance with Claim 1, the conditioned silicon oxynitride layer "has a composition $Si_XO_{Y+}N_ZH_{A-}$".

The Examiner argues that "the remaining portion of oxynitride layer 16 [under silicon oxide layer 70b] corresponds to the conditioned layer". However, as described above, Cheng et al. fails to teach that the composition of the remaining portion of silicon oxynitride

layer 16 (under silicon oxide layer 70b) is modified, changed or conditioned in any way. For this reason, the "remaining portion of silicon oxynitride layer 16" described by Cheng et al. cannot correspond to a "conditioned silicon oxynitride layer" as recited in Claims 1 and 20.

Note that the silicon oxide layer 70b of Cheng et al. is arguably the only layer that is "conditioned" (even though this silicon oxide layer 70b does not have a composition $Si_XO_{Y+}N_ZH_{A-}$). However, this silicon oxide layer 70b is removed by the subsequent wet clean step. (Cheng et al., Col. 8, lines 27-29.)

Consequently, Cheng et al. fail to teach "wherein the wet clean step does not react with the conditioned silicon oxynitride layer" as recited by Claim 20. For this additional reason, Claim 20 is allowable over Cheng et al. in view of Ballantine et al.

Claims 12-17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. in view of Ballantine et al. and Wolf.

Claims 12-17, which depend from Claim 1, are allowable over Cheng et al. and Ballantine et al. for at least the same reasons as Claim 1. Because Wolf does not remedy the above-described deficiencies of Cheng et al. and Ballantine et al., Claims 12-17 are allowable over Cheng et al. in view of Ballantine et al. and Wolf.

Claim 19 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. in view of Ballantine et al. and Applicants Admitted Prior Art (AAPA).

Claim 19, which depends from Claim 1, is allowable over Cheng et al. and Ballantine et al. for at least the same reasons as Claim 1. Because AAPA does not remedy the above-described deficiencies of Cheng et al. and Ballantine et

al., Claim 19 is allowable over Cheng et al. in view of Ballantine et al. and AAPA.

CONCLUSION

Claims 1-4 and 11-20 are pending in the present application. Reconsideration and allowance of these claims is respectfully requested. If the Examiner has any questions or comments, he is invited to call the undersigned at (925) 895-3545.

Respectfully submitted,

Customer No. 027158

E. Eric Hoffman
Attorney for Applicants
Reg. No. 38,186

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